CLAIMS

1. A data processing system for distributing and authenticating documents from a plurality of parties to a recipient data processing apparatus, the system comprising

a plurality of document distribution devices each being operable to generate an original hash value from the content of an electronic file containing a document to be distributed,

a data communications network operable to provide a facility to communicate each of the original hash values to the recipient data processing apparatus, the recipient data processing apparatus being operable

to receive the original hash values from each of the plurality of document distribution devices via the data communication network,

to generate an original super hash value from the plurality of the original hash values received,

to communicate the original super hash to the plurality of document distribution devices,

wherein after a predetermined event, the plurality of document distribution devices are operable

to communicate each of the respective electronic files to the recipient data processing apparatus, the recipient data processing apparatus being operable

to generate a comparative hash value from the content of the electronic file containing the document received from each of the document distribution devices,

to generate a comparative super hash value from each of the comparative hash values,

to communicate the comparative super hash value to each of the document distribution devices, and

to determine whether or not the documents received by the recipient data processing apparatus have changed from a comparison of at least one of the original hash values and the comparative hash values and the comparative super hash value and the original super hash value.

2. A data processing system according to claim 1, wherein the recipient data processing apparatus is operable to identify a document which has changed by comparing each original hash value with the corresponding comparative hash value, and if the comparative hash value is not the same as the original hash value determining that the corresponding document has changed.

3. A data processing system according to claim 1 or claim 2, wherein the original hash value generated by a document distribution device is encrypted using a private key associated with the document distribution device.

4. A data processing system according to claim 2 or claim 3, wherein the super hash value to be communicated to the document distribution devices is encrypted using a private key associated with the recipient data processing apparatus.

5. A data processing system according to any preceding claim, wherein the electronic file containing the document to be distributed is encrypted using a public key associated with the recipient data processing apparatus prior to being communicated to the recipient data processing apparatus.

6. A data processing system according to any preceding claim, wherein the predetermined event includes expiration of a time limit on a particular date.

7. A data processing system as claimed in any preceding Claim, wherein the electronic file is created by an application program.

8. A data processing system as claimed in Claim 7, wherein the electronic file is communicated as part of an e-mail.

9. A data processing system as claimed in Claim 7, wherein the electronic file is communicated on a data carrier to the recipient data processing device via a postal service.

10. A data processing system as claimed in Claim 9, wherein the original hash value is represented as a bar code, the bar code being arranged in association with the data carrier, and the recipient data processing apparatus includes an ingestion device for reproducing the electronic file from the data carrier and a bar code reader for reproducing the original hash value from the bar code associated with the data carrier, the electronic file representing the document being stored in association with the hash value in a data store.

11. A data processing system as claimed in Claim 7, wherein the document is generated from an on-line browser, the data communications network including one of the intranet and the internet.

12. A document distribution device for distributing documents to a recipient data processing apparatus via a data communications network, the document distribution device comprising

a data processing apparatus operable

to process applications software for generating an electronic document, and

to generate an original hash value from the electronic document, and

a communication interface operable to provide a facility for communicating the original hash value to a recipient data processing apparatus via a data communications network, and, after a predetermined event for communicating the electronic document to the recipient data processing apparatus via the data communications network.

13. A document distribution device, as claimed in Claim 12, wherein the data processing apparatus is operable in combination with the communications interface to receive from the recipient data processing apparatus an original super-hash value generated by the recipient data processing apparatus from a combination of the original hash value communicated by the data processing apparatus and a hash value generated by at least one other document distribution device, and

to receive a comparative super hash value generated by the recipient data processing apparatus from the electronic document received from the document

distribution device and at least one other electronic document received from the at least one other document distribution device.

14. A document distribution device as claimed in Claim 12 or 13, wherein the data processing apparatus is operable

to encrypt the original hash value using a private key associated with the document distribution device.

15. A document distribution device as claimed in Claim 14, wherein the data processing apparatus is operable

to decrypt the super hash value received from recipient data processing apparatus using a private key associated with the recipient data processing apparatus.

16. A document distribution device as claimed in any of Claims 12 to 15, wherein the data processing apparatus is operable

to encrypt the electronic file containing the document produced by the applications software using the private key associated with the document distribution device prior to being communicated to the recipient data processing apparatus.

17. A document distribution device as claimed in Claim 16, wherein the communications interface includes a recording device operable to record the electronic file on a data carrier, and a bar code generator operable to represent the original hash value as a bar code, and an arrangement for associating the bar code with the data carrier.

18. A document distribution device as claimed in any of Claims 12 to 17, wherein the applications software provides an on-line web browser, the document being generated from the on-line browser, the data communications network including one of the intranet and the internet.

19. A recipient data processing device for providing a facility for authenticating documents received from document distribution devices via a data communications network, the recipient data processing device comprising

a communications interface operable to receive original hash values from the document distribution devices via the data communication network, and

a data processing apparatus including a hashing processor operable to generate an original super hash value from the plurality of the original hash values received, to communicate the original super hash value to each of the document distribution devices, wherein the data processing apparatus is operable in combination with the communications interface,

to receive, after a predetermined event, respective electronic files from document distribution devices, and

to generate a comparative hash value from the content of the electronic file containing the document received from each of the distribution devices,

to generate using the hashing processor a comparative super hash value from each of the comparative hash values,

to communicate the comparative super hash value to the document distribution devices, and

to determine whether or not the documents received by the recipient data processing apparatus have changed from a comparison of at least one of the original hash values and the comparative hash values and the comparative super hash value and the original super hash value.

20. A recipient data processing apparatus as claimed in Claim 19, wherein the data processing apparatus is operable to identify a document which has changed by comparing each original hash value with the corresponding comparative hash value, and if the comparative hash value is not the same as the original hash value determining that the corresponding document has changed.

21. A recipient data processing apparatus as claimed in Claim 19 or 20, wherein the original hash values received from the document distribution devices have

been encrypted using a private key associated with each document distribution device, the recipient data processing apparatus including

an encryption processor operable to decrypt the original hash values using a public key associated with the document distribution device.

22. A recipient data processing apparatus according to claim 21, wherein the encryption processor is operable to encrypt the original super hash value and the comparative super hash to be communicated to the document distribution devices.

23. A recipient data processing apparatus according to any of claims 19 to 22, wherein the encryption processor is operable to decrypt the electronic file representing the distributed document using a public key associated with the document distribution devices.

24. A recipient data processing apparatus according to any of Claims 19 to 24, comprising an ingestion device for reproducing the electronic file from the data carrier and a bar code reader for reproducing the original hash value from the bar code associated with the data carrier, the electronic file representing the document being stored in association with the hash value in a data store.

25. A recipient data processing apparatus as claimed in any of claims 19 to 24, wherein the communications interface includes an on-line browser facility for generating the document, the data communications network including one of the intranet and the internet.

26. A data processing method for distributing documents from a plurality of parties to a recipient data processing apparatus, the method comprising

generating for each of the plurality of parties an original hash value from the content of an electronic file representing a document to be distributed,

communicating the original hash value to the recipient data processing apparatus via a data communications network;

generating, at the recipient data processing apparatus, an original super hash value from the plurality of the original hash values received, and

communicating the original super hash to the plurality of document distribution devices, and

after a predetermined event,

communicating, from the plurality of document distribution devices, each of the respective electronic files to the recipient data processing apparatus;

generating, at the recipient data processing apparatus, a comparative hash value from the content of the electronic file containing the document received from each of the distribution devices;

generating a comparative super hash value from each of the comparative hash values; and

determining whether or not the documents received by the recipient data processing apparatus have changed from a comparison of at least one of the original hash values and the comparative hash values and the comparative super hash value and the original super hash value.

27. A data processing method according to Claim 26, comprising

identifying a document which has changed by comparing each original hash value with the corresponding comparative hash value, and if the comparative hash value is not the same as the original hash value,

determining that the corresponding document has changed.

28. A method for distributing documents to a recipient data processing device via a data communications network, the method comprising

generating an electronic document, and

generating an original hash value from the electronic document, and

communicating the original hash value to a recipient data processing apparatus via a data communications network, and, after a predetermined event communicating the electronic document to the recipient data processing apparatus via the data communications network.

29. A method, as claimed in Claim 27, comprising

receiving from the recipient data processing apparatus an original super-hash value generated by the recipient data processing apparatus from a combination of the original hash value communicated by the data processing apparatus and a hash value generated by at least one other document distribution device, and

receiving a comparative super hash value generated by the recipient data processing apparatus from the electronic document received from the document distribution apparatus and at least one other electronic document received from the at least one other document distribution device.

30. A method of authenticating documents received from document distribution devices via a data communications network, the method comprising

receiving original hash values from the document distribution devices via the data communication network,

generating an original super hash value from the plurality of the original hash values received, and

communicating the original super hash value to each of the document distribution devices,

receiving, after a predetermined event, respective electronic files from document distribution devices, and

generating a comparative hash value from the content of the electronic file containing the document received from each of the distribution devices,

generating a comparative super hash value from each of the comparative hash values,

communicating the comparative super hash value to the document distribution devices, and

determining whether or not the documents received by the recipient data processing apparatus have changed from a comparison of at least one of the original hash values and the comparative hash value and the comparative super hash value and the original super hash value.

31. A computer program providing computer executable instructions, which when loaded onto a computer performs the method according to any of claims 26 to 31.

32. A computer program providing computer executable instructions, which when loaded onto a data processing apparatus operates as a document distribution device according to any of claims 12 to 18, or a recipient data processing apparatus according to any of claims 19 to 25.

33. A data carrier bearing a representation of the computer program as claimed in Claim 31 or 32.

34. A data processing apparatus for distributing documents from a plurality of parties to a recipient data processing apparatus, the apparatus comprising

means for generating for each of the plurality of parties an original hash value from the content of an electronic file representing a document to be distributed,

means for communicating the original hash value to the recipient data processing apparatus via a data communications network;

means for generating, at the recipient data processing apparatus, an original super hash value from the plurality of the original hash values received, and

means for communicating the original super hash to the plurality of document distribution devices, and

after a predetermined event,

means for communicating, from the plurality of document distribution devices, each of the respective electronic files to the recipient data processing apparatus;

means for generating, at the recipient data processing apparatus, a comparative hash value from the content of the electronic file containing the document received from each of the distribution devices;

means for generating a comparative super hash value from each of the comparative hash values; and

means for determining whether or not the documents received by the recipient data processing apparatus have changed from a comparison of at least one of the

original hash values and the comparative hash values and the comparative super hash value and the original super hash value.

35. A data processing system, a document distribution device or a recipient data processing apparatus substantially as herein before described with reference to the accompanying drawings.

36. A data processing method for distributing documents, a method for distributing documents to a recipient data processing, or a method of authenticating documents received from document distribution devices substantially as herein before described with reference to the accompanying drawings.